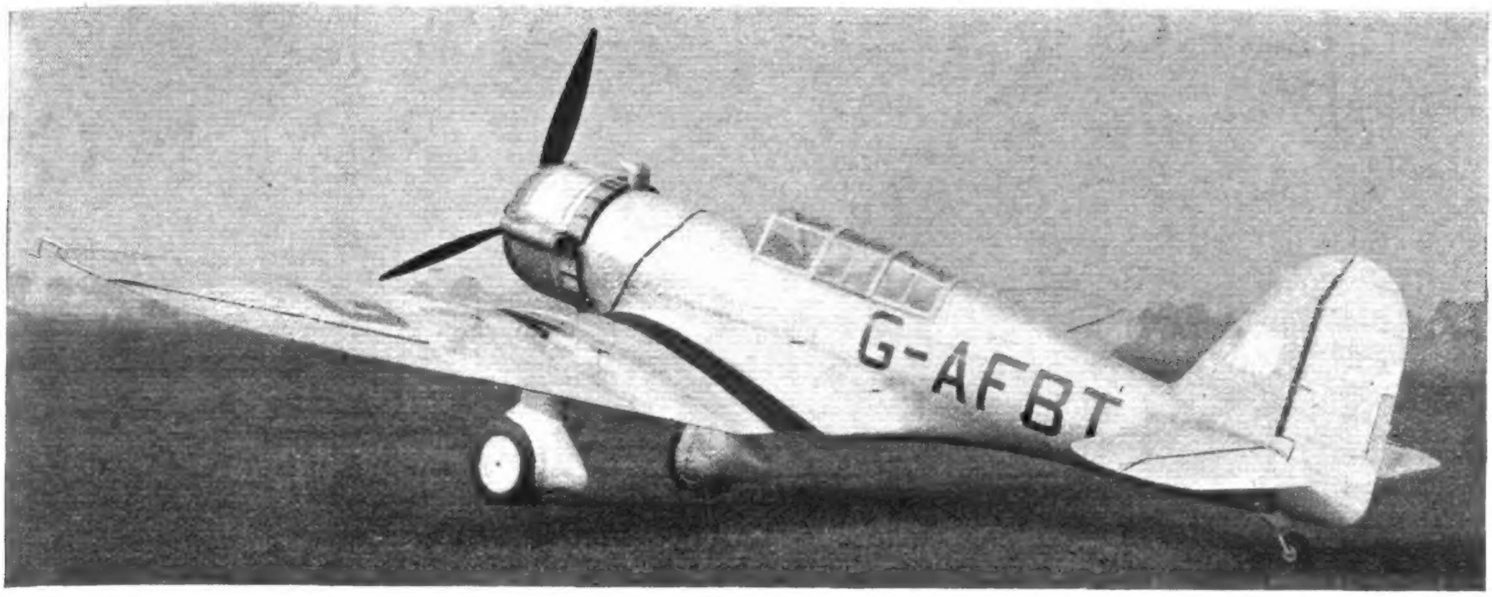


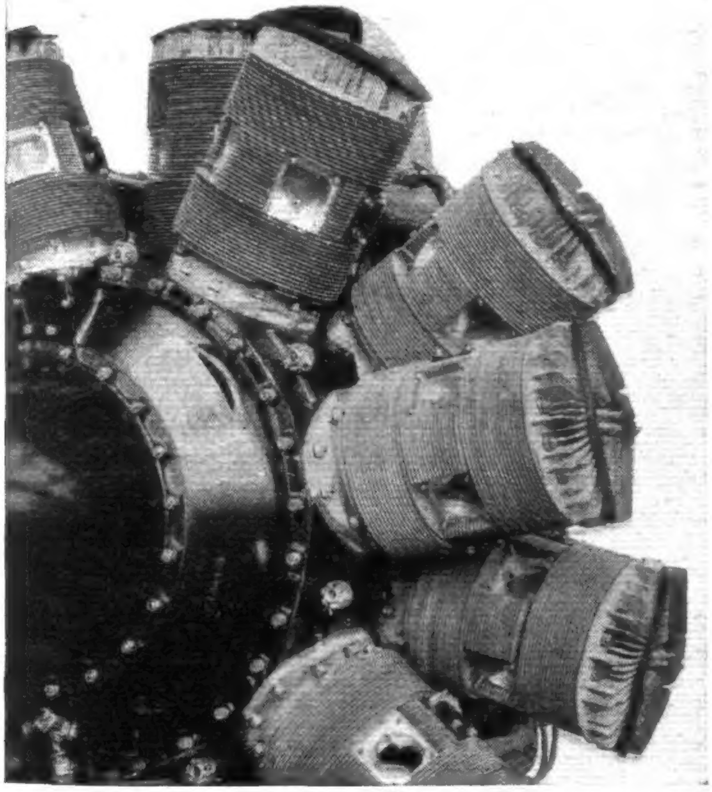
The flying test-bed for the Bristol Hercules engine is a Northrop monoplane. Note the long-chord cowling with controllable cooling gills. The position of the air intake above the cowling is interesting.

SOMETHING UP ITS SLEEVE

The Bristol Hercules Engine Starts Its Flight Tests

QUITE a sensation was caused at the Paris Aero Show last November by the first appearance of the Bristol Aeroplane Co.'s brand new fourteen-cylinder sleeve-valve air-cooled radial. The Hercules, as this engine is called, was granted the British Air Ministry's type approval some time ago, and is the most powerful British engine to have this approval. Already a series of flight trials has begun at the Bristol Company's aerodrome at Filton.

It will be recalled that, as previously recorded in *Flight*, the Hercules is a double-row radial with a bore of 146 mm. (5.75in.) and a stroke of 165 mm. (6.5in.), giving a total capacity of 38.7 litres, or 2,360 cu. in. The first version, which is the one that has just begun its flight tests, is medium supercharged and delivers 1,290 b.h.p. for take-off at 2,650 r.p.m. The maximum permissible power for a period not exceeding 5 min. is 1,375 b.h.p. at 2,750 r.p.m. and 4,000ft. (1,220 metres). The maximum specific output of the medium-supercharged version is thus 35.5 h.p. per litre. Allowing for the usual process of development, this figure will doubtless be further improved as and when experience has accumulated as a result of the present flight trials.



The fourteen-cylinder Hercules develops 1,290 b.h.p. at 2,650 r.p.m. for take-off, and a maximum of 1,375 b.h.p. at 2,750 r.p.m. at 4,000 ft.

The Hercules, it is known, is destined for certain types of Service aircraft, but as it was desired to get flight trials completed as soon as possible, and as the new prototype aircraft for which the engine is intended are not yet ready for flight, the Bristol company decided to obtain from stock, as it were, a type capable of serving as a flying test-bed for the engine. The choice fell on a Northrop monoplane, which has the necessary strength factors to take the great power developed by the single engine unit.

In addition to maximum speed and climbing trials, the machine will be used for the investigation of cooling characteristics, for which tests a very complete set of apparatus has been installed to measure temperatures and air flow.

Closely connected with the question of cooling is the problem of fuel consumption. It will be recollected that the smaller Bristol sleeve-valve, the Perseus, which underwent actual operating trials in the Short *Syrinx*, belonging to Imperial Airways, demonstrated remarkable fuel economy, and the Hercules will be tested in the Northrop by long periods of flying on weak mixture strengths. The impending adoption of 100-octane fuel will doubtless play its part in further improvement.

The two years or so of continuous development work which has already been carried out on the Hercules will thus culminate in a lengthy and very searching flight test period (the present programme calls for about 200 hours), which should, as the Americans say, get all the bugs out of the engine before it goes into actual service.

Death of Major Baden-Powell

THE brother of Lord Baden-Powell, Major B. F. S. Baden-Powell, late Scots Guards, died last Sunday at Sevenoaks at the age of 77. He was an early pioneer of air work of all sorts, ballooning, airships, aeroplanes, and, in particular, man-lifting kites. In 1894 he made experiments with man-lifting kites at Pirbright, and the War Office showed some temporary interest in them. He was not allowed to take them to the South African War, though before the battle of Magersfontein Lord Methuen asked him to send one up to take photographs. At that battle captive balloons scored their first notable success in action.

Fifty-seven years ago Major Baden-Powell became a member of the Royal Aeronautical Society, undertook the work of honorary secretary, and later became the president. His aeroplanes were not a great success, and his connection with airships was represented by a model exhibited at Olympia in 1909. He remained an enthusiastic balloonist until late in life. His other activities were varied, but it is to him as a pioneer of the air that *Flight* respectfully offers this small tribute.